

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-004956**Date Inspected:** 05-Dec-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Geng Wei, Zhang Bao Wei**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Assembly**Summary of Items Observed:**

This report serves to document the events occurring on this date at the following location. Caltrans Quality Assurance (QA) Inspector Robert Vatcher arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

OBG Assembly Bay II

5AE-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

5BE-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

5CE-

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Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

3AE-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

3BE-

Lift Interior- No Observed Welding Activity

Lift Topside-

QA performed Welding procedure specification verification at SEG016*-016 deck panels DP63A & DP64A. QA observed for this operation the FCAW process utilizing 1.4 mm diameter Supercored 71H E71T-1 electrode wire in DCEP mode which was checked out of the station on 11/28/08 at 0700. Hong Yong Li 044801 the qualified welding operator was observed as well utilizing a stringer bead method for this evolution in the initial root pass per the welding procedure specification WPS-B-T-223(2)1T. QA measured in-process temperature to be approximately 90 degrees celsius average, amperage to be 285 (average), voltage at 29.0 and a travel speed of approximately 200 mm per minute. ZPMC QC personnel Chen Chih Ming was present to measure and record this operation.

4AE-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

4BE-

Lift Interior- No Observed Welding Activity

Lift Topside-

QA observed the in process joining of SEG020A*-005 deck plates (situated atop of the segment) DP77A & DP43A by the SAW process. QA measured welding parameters in accordance with welding procedure specification WPS-B-T-2221-B-L2C-S-2 utilizing non corroded or detritus bearing 4.0 mm diameter H14 electrode wire by qualified welding operator chen Xi Feng 052692. Measured amperage at 680.0. Voltage at 32.0, travel speed at 500 mm per minute. Flux was reclaimed and strained through a large rare earth magnet and immediately reused. QA performed a cursory visual examination of the previously joined area prior to further depositing of weld metal. ZPMC QC personnel Zhang Xian Ji was present for this welding evolution. ZPMC QC

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personnel Chen Chih Ming was available as well ensuring the 20C minimum preheat was established by way of a Fluke infrared temperature thermometer.

Mid bay-

QA observed the in process joining of SEG007A-007 side plates SP190A & SP192A by the SAW process. QA measured welding parameters in accordance with welding procedure specification WPS-B-T-2221-B-L2C-S-2 utilizing non corroded or detritus bearing 4.0 mm diameter H14 electrode wire by qualified welding operator Huang Xinlan 0344780. Qualified welding status was verified by the presence of certification card from the welders pocket Measured amperage at 680.0, Voltage at 33.0, travel speed at 500 millimeters per minute. Preheat was measured at 67.0 degrees celsius. Flux was reclaimed and strained through a large rare earth magnet and immediately reused. QA performed a cursory visual examination of the previously joined area prior to further depositing of weld metal. ZPMC QC personnel Wang Jie was present for this welding evolution. The above mentioned items as observed and documented by QA appears to be in conformance with the contract documents.

Side Plate to Side Plate back gouging in progress at segment SEG007A-003. SP197-001 to SP199-001. QA performed a cursory visual examination of the preparation to sound metal. The above mentioned items as observed and documented by QA appears to be in conformance with the contract documents.

Side panels for segment SEG007A-002 side plates SP185-001 & SP186-001 have been fit up and are ready to be tacked. QA performed a cursory visual examination of the bevel angle, land area and initial joint cleanliness performed at this location. The above mentioned items as observed and documented by QA appears to be in conformance with the contract documents.

5CW-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

5BW-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

5AW-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

4BW-

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Lift Interior-

QA observed that multiple diaphragm plate to diaphragm plate joining operations have occurred and are occurring presently throughout the west segment.

Random minimum tack welds installed at diaphragm plate to floor beam flanges at panel point 27.

No tack welds installed at diaphragm plate to floor beam flanges at panel point 26.

Lift Topside- No Observed Welding Activity

Deck panels DP76A & DP75A, DP73A & DP39A complete joint penetration welds are completely filled out by the SAW process.

4AW-

Lift Interior- No Observed Welding Activity

Tack welds installed at diaphragm plate to floor beam flanges at panel point 25.

Lift Topside- No Observed Welding Activity

Deck panels DP27A & DP65A, DP68A & DP67A complete joint penetration welds are completely filled out by the SAW process.

3BW-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

QA observed diaphragm plate to diaphragm plate welds installed at panel point 23. No Diaphragm plate to floor beam flange full length fillet welds installed at this time. No joining operations occurring at this location at this time as well.

QA observed diaphragm plate to diaphragm plate welds installed at panel point 24. Diaphragm plate to floor beam flange full length fillet welds installed at this time as well with the exception of both ends for the remainder of the last diaphragm plate. Also only the north side diaphragm plate to floor beam flange has been joined.

3AW-

Lift Interior- No Observed Welding Activity

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QA observed 1 operation where diaphragm plate to diaphragm plate joining by the SMAW process is being performed at panel point 19.

QA observed diaphragm plate to diaphragm plate tack welds only at panel point 20. No Diaphragm plate to floor beam flanges full length fillet installed at this time. No joining operations occurring at this location at this time.

QA observed diaphragm plate to diaphragm plate tack welds only at panel point 21. No Diaphragm plate to floor beam flange full length fillet welds installed at this time. No joining operations occurring at this location at this time as well.

QA observed three locations where diaphragm plate to diaphragm plate joining by the FCAW process is being performed at panel point 22. No Diaphragm plate to floor beam flange full length fillet welds installed at this time.

Lift Topside- No Observed Welding Activity

North Bay of OBG Assembly-

QA observed the in process joining of SEG007A-014 bottom plates BP038A & BP092A by the SAW process. QA measured welding parameters in accordance with welding procedure specification WPS-B-T-2221-B-L2C-S-2 utilizing non corroded or detritus bearing 4.0 mm diameter H14 electrode wire by qualified welding operator Wang lan Ying 045265. Qualified welding status was verified by the presence of certification card from the welders pocket. Measured amperage at 582.0, Voltage at 32.5, travel speed at 483 millimeters per minute. Preheat was measured at 110.0 degrees Celsius. Flux was reclaimed and strained through a large rare earth magnet and immediately reused. QA performed a cursory visual examination of the previously joined area prior to further depositing of weld metal. ZPMC QC personnel Zhang Xian Ming was present for this welding evolution. AB/F QC personnel li Hanjie was available as well. The above mentioned items as observed and documented by QA appears to be in conformance with the contract documents.

Side Plate to Side Plate back grinding in progress at SP124-001 to SP097-001. QA performed a cursory visual examination of the preparation to sound metal.

QA observed at SEG037A-009 side plates SP719A to SP4381A that ceramic backing has been installed to facilitate joining without requiring back gouging and back welding.

North Sub-Assembly Area (Outside of OBG)

No observed joining operations

Summary of Conversations:

No relevant conversations this date.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Peter Dauterman, who represents the Office of Structural Materials for your project.

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Inspected By: Vatcher,Robert

Quality Assurance Inspector

Reviewed By: Cuellar,Robert

QA Reviewer